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Technical Comparison Sheet

MDR – RPA GÖTTFERT - Modular Rheometer Series



MDR
Moving Die Rheometer



MDR-sweep
Moving Die Rheometer-s



RPA
Rubber Process Rheometer



RPA
Rubber Process Rheometer - Rotational

Technical Comparison Sheet

GÖTTFERT Werkstoff- Prüfmaschinen GmbH	MDR – Moving Die Rheometer	MDR-sweep – Moving Die Rheometer-s	RPA – Rubber Process Rheometer
Control / Operation	PC controlled Software Rubberview / RubberCONNECT-XML connection	PC controlled Software Rubberview / RubberConnect-XML connection	PC controlled Software / Rubberview / RubberCONNECT-XML connection
Start button	Multifunctional / coloured at device	Multifunctional / coloured at device	Multifunctional / coloured at device
Power supply	230 V / 50 Hz - other on request	3x 400 V + N+PE - other on request	3x 400 V + N+ PE - other on request
Frequency	0,833 Hz or 1,66 Hz	0,833 Hz or 1,66 Hz	0.001 Hz – 120 Hz depending on the deflection 0,001 Hz - RPA Rotational : 0,001Hz -100Hz
Amplitude °	Standard 0.5 // optional different amplitude - quickly mech selectable 0.1° - 1° Strain [%] 1,4 -14	0.01° – 10° Strain [%] 1,4 -140 selectable via Software	± 0.001° – 90° (optional 360°) Strain: [%] 0,014 – 1256 (optional 5000) RPA Rotational : ±0,001° (±) – ∞; Rotation
Test chamber	open or hermetically closed biconical / shore	open or hermetically closed biconical / shore	open / hermetically closed biconical / shore
Torque transducer range	5 NM – optional 20 NM	5 NM – optional 25 NM	5 NM - optional 25 NM
Pressure / Axial force 0-10 KN	optional	optional	optional
Test temperature range	5°C above RT – up to 230°C Resolution 0,01°C – temporal +/-0,2°C	5°C above RT – up to 230°C Resolution 0,01°C – temporal +/-0,2°C	5°C over RT – up to 230°C Resolution 0,01°C – temporal +/-0,2°C
Heating rate for Temperature Sweep	Approx. 1,67° C/s	Approx. 1,67 °C/s	Approx. 1,67° C/s
Cooling rate for Temperature sweep (by using option air cooling)	Maximum 1°C/s	Maximum 1°C/s	Maximum 1°C/s
Air cooling test chamber	optional	optional	optional
Test chamber locking force - soft closing system to prevent foil damages	11,5 KN	11,5 KN	11,5 KN
Accuracy amplitude / deflection		0,001°	0,001°
Temperature / data acquisition	Via 16 bit converter / PT100 1/3 DIN	Via 16 bit converter / PT100 1/3 DIN	Via 16 bit converter / PT100 1/3 DIN
Temperature calibration Temp.range	5 sets of calibration data over the Temp. Range	5 sets of calibration data over the Temp. Range	5 sets of calibration data over the Temp. Range

Technical Comparison Sheet

GÖTTFERT Werkstoff-Prüfmaschinen GmbH	MDR – Moving Die Rheometer	MDR-sweep – Moving Die Rheometer-s	RPA – Rubber Process Rheometer
Testmode	Vulcanisation Temperature sweeps	Vulcanisation Temperature sweeps	Amplitude sweep, Frequency sweep (both also with prior deflection), Vulcanization, Temperature Sweep, Shear rate sweep, Relaxation (up to 90°), Retardation, Hysteresis, Tensile tests, Ramp function (up to 90°)
Units of measure	Torque, Shear modulus, Dynamic viscosity, Temperature, Pressure, Time, Frequency, Shear rate	Torque, Shear modulus, Dynamic viscosity, Temperature, Pressure, Time, Frequency, Shear rate	Torque, Shear modulus, Dynamic viscosity, Temperature, Pressure, Time, Frequency, Shear rate
Evaluation tags	Shear modulus G' , G'' , G^* , torque S' , S'' , S^* , Tangent delta, loss angle, Gamma , Eta* , Eta' , J^* , J' , J''	Shear modulus G' , G'' , G^* , torque S' , S'' , S^* , Tangent delta, loss angle, Gamma , Eta* , Eta' , J^* , J' , J''	Shear modulus G' , G'' , G^* , torque S' , S'' , S^* , Tangent delta, modulus under extension/compression E' , E'' , E^* , Compliance under extension/compression D' , D'' , D^* , spring rate K_s , K_c , K_p , Damping coefficient C , Damping coefficient C , loss angle , Gamma , Eta* , Eta' , J^* , J' , J'' Transient viscosity - Shear rate up to 500 s-1 - Correction of dissipation heating during transient shear or high deformation by measuring the heat flow (RPA - Rotational) LAOS mit FFT evaluation

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